

IN THE CLAIMS

1. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product comprising:

a) a fluid filled conk tank for separating the shellfish product from packing ice, sea shells and other such large objects;

b) means for automatically transporting the product to said conk tank and dumping the shellfish product into said conk tank

c) a boiler system for supplying heated brine and cooking the shellfish product therein, said boiler system comprising:

i) a brine mixing tank including means for introducing water therein and means for introducing salt therein to create a brine solution of a predetermined concentration in which the shellfish product is to be cooked;

ii) a primary seafood boiler for retaining brine obtained from said brine mixing tank and maintaining said brine at a constant, predetermined temperature; and

iii) a conduit extending between said brine mixing tank and said primary seafood boiler for selectively transporting of brine to primary mixing tank; and

iv) at least one auxiliary boilers in line with said conduit for heating said brine to the desired temperature and storing the brine therein until called for to replenish used brine that has been removed from said primary seafood boiler; and

d) means for automatically transferring the shellfish product from said conk tank to said boiler system.

2. (Previously Presented) Apparatus and system for cooking, drying and peeling shellfish product as recited in claim 1, further comprising means for retaining the shellfish product, wherein said means for retaining shellfish product includes at least one of a crate and a container, and

wherein said means for automatically transporting product removes said retaining means therefrom upon said product being dumped from said retaining means into said conk tank.

3. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, further comprising:

- a) at least one dryer for dehydrating the shellfish product; and
- b) means for automatically transferring the shellfish product from said boiler system to said dryer.

4. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, further comprising:

- a) at least one peeling device for removing the heads, shells and tails from the shellfish product; and
- b) means for automatically transferring the dried shellfish product from said dryer into said peeling device and for removing the shellfish product therefrom.

5. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, further comprising automated means for separating shells and debris from finished product.

6. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, further comprising automated means for grading the shellfish product by size.

7. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, further comprising an automated means for packaging shells and dust.

8. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 2, wherein said automated means for transporting the retained shellfish product to said conk tank comprises:

a) a conk tank conveyor system having a first loading end and a second dumping end, said dumping end extending above and beyond an edge of said conk tank;

b) a dumping cage disposed proximal to said dumping end of said conveyor system positioned in a manner conducive to catching said retaining means after falling off said dumping end so an open top portion of the cage is oriented towards said conk tank thereby emptying the contents of said retaining means therein, said dumping cage being substantially open so as not to restrict passage therethrough of said shellfish product; and

c) means for mechanically ejecting said retaining means from said dumping cage.

9. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, wherein said conk tank comprises:

a) a watertight housing having sidewalls and an open top;

b) a predetermined quantity of water retained within said housing; and

c) means for agitating said water and lightweight objects within said conk tank.

10. (Cancelled)

11. (Cancelled)

12. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, wherein said means for transferring the shellfish product from said conk tank to said boiler system is a substantially inclined conk tank conveyor having a first lower end located at a bottom portion of said conk tank and positioned below a dumping cage, and a second, upper end extending above and beyond an opposing sidewall of said conk

tank extending over said primary seafood boiler thereby permitting the shellfish product to fall therein upon reaching the end of said conk tank conveyor.

13. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, wherein said primary seafood boiler further includes a means for agitating the brine and shellfish product contents therein.

14. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 13, wherein said agitation means includes at least one paddle wheel at a surface of the brine to keep the shellfish product moving evenly therethrough.

15. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 13, wherein said agitation means includes at least one jet nozzle for circulating the brine and shellfish product within the boiler.

16. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, wherein said primary seafood boiler further includes means for selectively maintaining and monitoring a specific temperature of said brine therein.

17. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, wherein said primary seafood boiler further includes salinity monitoring sensors to assure that the shellfish product is being cooked in an adequate brine mix.

18. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said means for automatically transporting said shellfish product from said boiler system to said dryer is a seafood dryer conveyor having a first lower end disposed at a bottom portion of said primary seafood boiler beneath a drop area of a conk

tank conveyor and a second end extending over and beyond an opposing sidewall wherein said dryer conveyor has a substantially horizontal orientation and terminates upon introduction to said dryer.

19. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 18, wherein said seafood dryer conveyor further includes a plurality of high speed fans disposed over a top side of said conveyor for cooling the shellfish product and stopping the cooking process.

20. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 18, wherein said seafood dryer conveyor further includes a plurality of spreader bars traversing the width of said conveyor and disposed slightly thereabove at a height sufficient to permit individual pieces of shellfish product to pass thereunder and for preventing passage of stacked shellfish product until said shellfish product resides on said conveyor thereby assuring the shellfish product is evenly spread thereon for more efficient cooling.

21. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 18, wherein said seafood dryer conveyor further includes a plurality of rakes for turning said shellfish product to further ensure uniform cooling thereof.

22. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 18, wherein said seafood dryer conveyor is enclosed to prevent exposure to airborne contaminants.

23. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 18, further including a transport portion of said seafood dryer conveyor composed of a mesh-like belting to permit the passage of air therethrough.

24. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, further comprising a means for supplying heat to the dryers by capturing heat generated by said boiling and broth systems and transferring the captured heat thereto.

25. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 24, wherein said dryer heat supplying means includes a manifold integral with said boiler system and in communication with the dryers to scavenge the heat from the heat generating boilers and transfer said scavenged heat to said dryer.

26. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 24, wherein said dryer heat supplying means further includes an air return system for returning air to said boiler system from said dryers using fans or blowers to maintain constant air flow and recirculation.

27. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said dryers include a means for moving and rotating said shellfish product within said dryers during the drying process.

28. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 27, wherein said product moving and rotating means is a vertically stacked conveyor system having a plurality of staggered, parallel conveyors spaced apart one above another and moving in alternating directions, wherein the shellfish product is introduced into the dryer on a first top conveyor moving in a first direction and falls off upon reaching an end thereof and lands on a second subjacent conveyor moving in a direction opposite said first direction thereby effectively rotating said shellfish product and moving said

shellfish product to an end thereof and providing said product to a further conveyor subjacent thereto until reaching a final bottom conveyor for transporting the shellfish product to another dryer or peeling device.

29. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 27, wherein said product moving and rotating means is a vertically stacked conveyor system having a plurality of staggered, parallel conveyors spaced apart one above another and moving in alternating directions, wherein the shellfish product is introduced into the dryer on a first top conveyor moving in a first direction and falls off upon reaching an end thereof and lands on a second subjacent conveyor moving in a direction opposite said first direction thereby effectively rotating said shellfish product and moving said shellfish product to an end thereof and providing said product to a further conveyor subjacent thereto until reaching a final bottom conveyor for transporting the shellfish product to a peeling device.

30. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 27, wherein said product moving and rotating device comprises a spiral platform having a substantially cylindrical chute extending medially therethrough wherein the spiral platform spirals the shellfish product upwards until reaching a top section where said product enters said chute and falls to a bottom section thereby rotating said product which is subsequently reloaded onto said spiral platform as the cycle repeats.

31. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said dryers further include vacuum bars running along a bottom portion of said dryer for vacuuming accumulated shells and shellfish product that may have fallen off said automated transfer means.

32. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said dryers further include sensors for detecting a moisture content within said shellfish product to ensure complete dehydration with no pathogen traces.

33. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, further comprising a product transfer system which utilizes suction to vacuum said shellfish product from one device to another.

34. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 33, wherein said at least one dryer is a spiral dryer and further comprising a peeling device and said product transfer system is utilized to move said shellfish product from said spiral dryer to said peeler.

35. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 4, wherein said peeling device comprises:

- a) an inner compartment having a screened bottom;
- b) an outer compartment; and
- c) a blade member that spins within said inner compartment so that the cleaned shellfish product rides along the smooth walls of said inner compartment while the heavier uncleaned shellfish product falls onto said screened bottom to continue cleaning and de-shelling process including
 - separation of debris and shells from finished product by vacuum extraction and loading by-product into at least one of packages and drums;
 - and working in sequence with the dryer and product transfer system, at least one of
 - i. means for grading product by size,
 - ii. means positioned within said inner compartment for

automatically unloading finished product;

iii. a mobile tilting unit for tilting said peeling device,

iv. a stationary stand for retaining said peeling device therein,

v. a screen sweeper positioned within said inner compartment and over said screened bottom for removing objects therefrom, and

vi. a plurality of air jets for circulating said shellfish product within said inner compartment.

36. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, further comprising a broth processing system wherein used brine is extracted from said primary seafood boiler and transported to said broth processing system for preparation into a seafood flavored broth.

37. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 36, further comprising broth storage tanks for the storage of the finished broth product.

38. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 36, further comprising a broth packaging system for packaging said broth for the market.

39. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 1, further comprising a spray drying system wherein used brine is extracted from said primary seafood boiler and injected as a fine mist into a heated furnace where instantaneous crystallization occurs creating a solid product to be used as a shellfish product flavored salt.

40. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said dryers further comprise conveyor rakes to stir said shellfish product during drying.

41. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 40, further comprising moisture sensors for activating said conveyor rakes.

42. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 41, wherein said dryers further include a temperature control.

43. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 42, wherein said temperature control comprises:

- a) thermostats; and
- b) regulators.

44. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said dryers further include air contaminate sensors for detecting a presence of at least one of contaminants and toxins within said dryer.

45. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 44, further comprising an alarm and notification mechanism in communication with said air contaminate sensors to notify an operator of a potentially hazardous condition.

46. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said dryers include a video monitoring device to allow an operator to observe the operation within the dryers.

47. (Previously Presented) Apparatus for cooking, drying and peeling shellfish product as recited in claim 3, wherein said dryers further include rheostats.

48. (Previously Presented) Apparatus for cooking, drying and peeling shellfish products as recited in claim 1, further comprising a computerized monitoring system and central data base to oversee all operational phases of said apparatus including performing, monitoring, maintaining and controlling of at least one of:

- a) video and audio monitoring devices;
- b) chemical detection;
- c) product tracking;
- d) production schedules;
- e) gross weights of product;
- f) yields of product;
- g) critical control points;
- h) product water activity;
- i) moisture content sensors;
- j) heat sensors for air and water;
- k) heat, water and air flow control system;
- l) salinity monitoring;
- m) boiling/drying/peeling timers and controls;
- n) HACCP guidelines and regulations;
- o) FDA (Dept. of Health) inspection and production forms;
- p) quality control;
- q) system and process troubleshooting;
- r) tips for GMP's;
- s) raw product testing;
- t) alarms and notification;

- u) product (size) grading;
- v) thermostats;
- w) regulators;
- x) LED control panel; and
- y) rheostats.

49. – 52. (Cancelled)

53. (Withdrawn) means for processing raw seafood product comprising:

- a) means for delivering raw seafood product to a heated receptacle having a brine solution therein;
- b) means for heating said apparatus; and
- c) means for recovering heat from said apparatus.

54. (Withdrawn) The process as recited in Claim 53 wherein said delivery of said raw seafood product is taken from the list of lift basket and conveyor belt.

55. (Withdrawn) The process as recited in Claim 54 wherein said lift basket is comprised of:

- a) means for supporting a receptacle having raw seafood product therein;
- b) means for conveying said receptacle to the product input aperture of said boiler; and
- c) means for discharging the raw seafood product from said receptacle into said boiler.

56. (Withdrawn) The process as recited in Claim 54 wherein said conveyor belt is comprised of:

- a) a continuous belt extending between two distal ends having motorized means for rotating said belt between said distal ends; and
- b) one distal end of said conveyor belt terminates at the input aperture for said boiler.

57. (Withdrawn) The process as recited in Claim 53 further comprising a brine mixing tank in communication with said heated receptacle.

58. (Withdrawn) The process as recited in Claim 53 further comprising auxiliary tanks for holding a brine solution in communication with said heated receptacle.

59. (Withdrawn) The process as recited in Claim 53, further comprising means for drying the processed seafood from said heated receptacle.

60. (Withdrawn) The process as recited in Claim 59, incorporating means for recirculating heat from the drying to the boiling process.

61. (Withdrawn) The process as recited in Claim 53, wherein the brine solution is transferred under predetermined conditions to a broth processing system.

62. (Withdrawn) The process as recited in Claim 61, wherein the broth processing system is comprised of:

- a) storing the broth in tanks; and
- b) packaging the broth.

63. (Withdrawn) The process as recited in Claim 53 further comprising sealed conduit in communication with said heated receptacle whereby air passing through said conduit is heated.

64. (Withdrawn) The process as recited in Claim 53 further comprising a spray drying system wherein brine is extracted from the heated receptacle and injected into a heated

furnace or hopper as a fine mist where it is almost immediately dehydrated thereby creating a solid product to be used as a seafood flavored salt or additive.

65. (Withdrawn) A broth processing system wherein the brine solution from a seafood boiler is transported to holding tanks prior to packaging as a brine broth.

66. (Withdrawn) A food flavoring byproduct system wherein the brine solution from a seafood boiler is extracted from the heated receptacle and injected into a heated furnace or hopper as a fine mist where it is almost immediately dehydrated thereby creating a solid product to be used as a seafood flavored salt or additive.

67. (Withdrawn) A peeling device in communication with a dryer, wherein said peeling device is comprised of:

- a) a loading device
- b) a screen sweeper
- c) a blade; and
- d) a tilting unit

68. (Withdrawn) A peeling device in communication with a dryer, wherein said peeling device is comprised of:

- a) a stationary stand;
- b) an unloading device;
- c) a blade; and
- d) a screened aperture providing access.

69. (Withdrawn) A spiral conveyor dryer in communication with a peeling device, wherein said spiral dryer cycles the product from a low end to a high end as heated air is passed over said product before dropping said product to the low end.

70. (Withdrawn) A stacked conveyor dryer in communication with a peeling device, wherein said stacked conveyor drier moves the product from one level to another as heated air is passed over said product.